Otitis Media Practice Guidelines

by the
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Otitis Media

Importance

- Most common medical problem in children
- Temporary hearing loss and delay in speech and language skills
- Incidence increased 224 percent between 1975 and 1990 in children under two
- $3.5 billion was attributed to direct and indirect costs for otitis media in 1989 alone

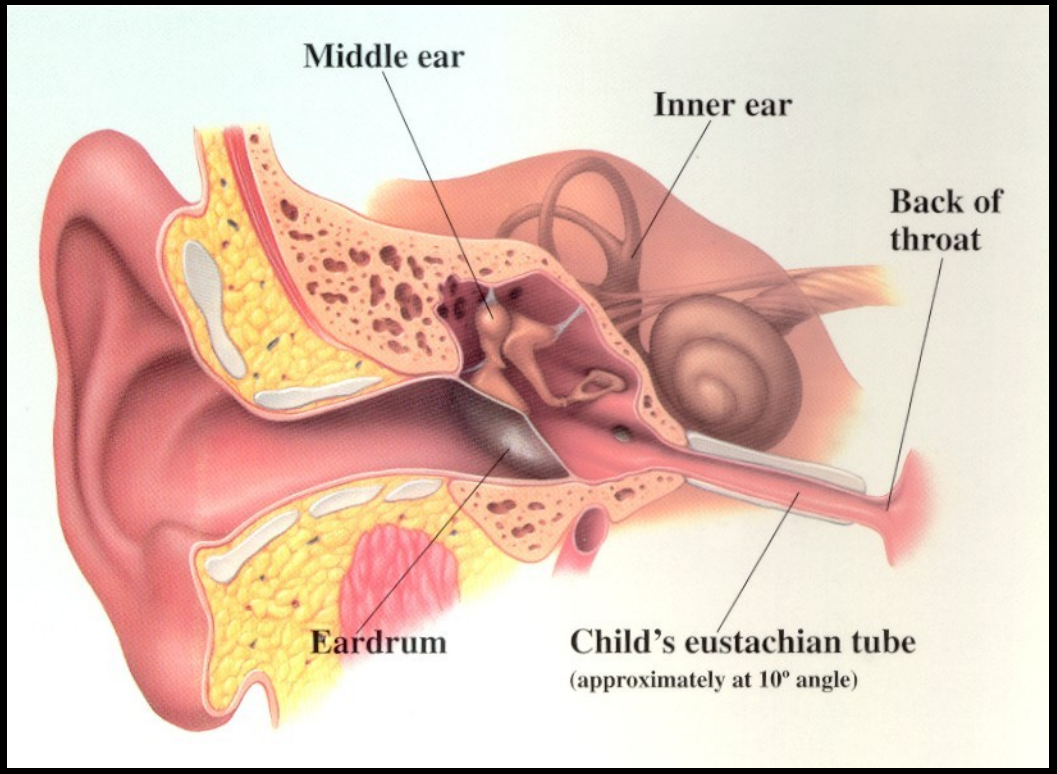
Otitis Media

Prevalence

- Occurs most frequently in infants and toddlers
- 12.8 million episodes in children under five across the United States in 1990
- Seventeen percent of children under two will have recurrent disease

Otitis Media
Pathophysiology

- Usually preceded by upper respiratory symptoms such as a cold or allergies
- Causes inflammation and accumulation of fluid in the middle ear which is located behind the ear drum
- Morbidity from accompanying pain and fever


Middle ear
Inner ear
Back of throat
Eardrum
Child's eustachian tube
(approximately at 10° angle)

Otitis Media

The Problem

- Significant uncertainties regarding the best management of otitis media
- Significant variations in how physicians diagnose and treat the condition
- It is unclear to many physicians and patients what constitutes the best care

Otitis Media

Practice Guideline Overview

1) More accurate physical examination

- A red ear is not sufficient diagnostic criteria
- Key is presence of fluid in the middle ear
- Documentation of abnormal mobility by pneumatic otoscopy and/or loss of landmarks is necessary

Otitis Media

Practice Guideline Overview

2) Use traditional, inexpensive antibiotics

- Inexpensive “narrow spectrum” antibiotics as effective as “broad spectrum” antibiotics, but have fewer potential side-effects
- Restrictive use of the newer antibiotics will retard the development of resistant organisms

Otitis Media

Practice Guideline Overview

3) Appropriate timing of surgical evaluation for children with severe infections

- Timing of referral can result in premature surgery for some children
- Others are referred too late and suffer unnecessary discomfort or temporary hearing loss

Otitis Media

Practice Guideline Overview

4) Increased testing for hearing loss

- Encourage increased testing for hearing loss
- If hearing is not checked some children who require more aggressive treatment are not identified
- Some children are treated too aggressively despite the fact that their hearing has not been affected by otitis

Otitis Media

Practice Guideline Overview

5) Clear indications for surgery

- Clear indications for the need of surgical intervention are given

Otitis Media

Practice Guideline Overview

6) A one month interval between diagnosis and routine follow-up for low-risk children

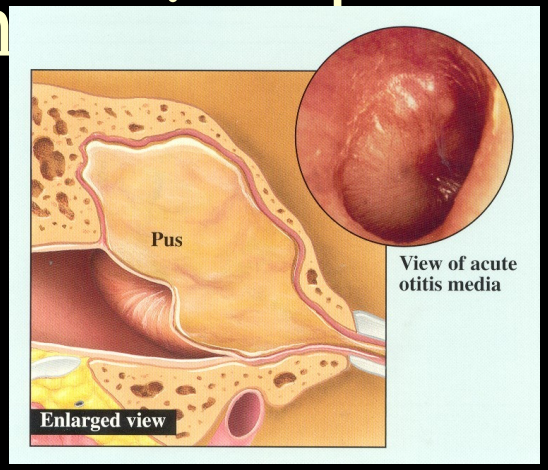
- An effective schedule for routine follow-up which maintains quality health care is suggested

Otitis Media

Practice Guideline Specifics

Acute Otitis Media

- Symptoms include earache, rubbing the ear, the feeling of a blocked ear, behavioral changes, fever, and h



Otitis Media

Practice Guideline Specifics

Acute Otitis Media

- Decreased mobility of the tympanic membrane
- Reddened, bulging, or opaque appearance
- Purulent material in the ear canal if perforation

Otitis Media

Practice Guideline Specifics

Acute Otitis Media

- Use of pneumatic otoscopy can increase accuracy in diagnosing AOM
- Tympanometry can also be used for assessing poor TM mobility, but its use for this purpose is supported by limited scientific evidence

Otitis Media

Practice Guideline Specifics

Treatment - AOM

Goals:

- Decreasing the duration of fever and pain
- Expediting the resumption of normal activity
- Limiting the small potential for suppurative complications

Otitis Media

Practice Guideline Specifics

Treatment - AOM

- Spontaneous cure in up to 80 percent of children treated only with analgesics
- Antibiotics increase cure rate to 94 percent, and decrease duration of symptoms and risk of complications
- Broad spectrum antibiotics probably offer no advantages over standard antimicrobials

Otitis Media

Practice Guideline Specifics

Treatment - AOM

The specific antibiotic chosen should provide the most narrow spectrum

Otitis Media

Practice Guideline Specifics

Treatment - AOM

Take into account:

- History of allergy or intolerance to a particular antibiotic or class of antibiotic
- Presumed causative organism *(Streptococcus pneumoniae* is most likely in a child previously untreated for AOM)

Otitis Media

Practice Guideline Specifics

Treatment - AOM

Take into account:

- Antibiotic exposure within the previous 30 days may have caused resistant organisms to predominate
- Conjunctivitis/Otitis Syndrome is suggestive of *H. influenzae* infection

Otitis Media

Practice Guideline Specifics

Treatment - AOM

Take into account:

- Compliance issues (taste, dosing regimen, storage and transport, and cost)

Otitis Media

Practice Guideline Specifics

For children who are not allergic to penicillins, the following antibiotics are currently recommended by the AAP and CDC in order of usage:

- Amoxicillin 80-100 mg/kg/day divided bid for 7-10 days.
- Augmentin (amoxicillin/clavulanate) 45 mg/kg/day divided bid for 7-10 days.

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Practice Guideline Specifics

- Ceftin (cefuroxime axetil [a second generation cephalosporin]) 30 mg/kg/day divided bid
- Rocephin (ceftriaxone) 50 mg/kg/dose IM/IV q day for 3 days

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Practice Guideline Specifics

Treatment - AOM

For penicillin allergic children, trimethoprim/sulfamethoxazole or erythromycin/sulfisoxazole are the initial choices

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Practice Guideline Specifics

Treatment - AOM

- as much as 90% amoxicillin/ penicillin “allergic reactions” are not true medicine allergic reactions
- Most of these reactions are actually viral exanthems or “Amoxicillin-virus” rashes

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Practice Guideline Specifics

Note that Suprax and Azythromycin have no place in routine management of otitis media.

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Practice Guideline Specifics

Treatment - Recurrent Otitis

- typically defined as three episodes within three months, four episodes within six months, or more than six within 12 months
- Recurrent bouts of otitis may warrant prophylactic antibiotic regimens

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Practice Guideline Specifics

Treatment - Recurrent Otitis

Prophylaxis

- Amoxicillin 20 mg/kg/day qhs
- Sulfisoxazole (Gantrisin) 50-75 mg/kg/day divided bid

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Follow-up

- Once antibiotic treatment is initiated the child should demonstrate symptomatic benefit within 72 hours
- Failure to show improvement indicates need for re-evaluation.

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Practice Guideline Specifics

Follow-up

- A follow-up examination should be scheduled for one month after the diagnosis and should include:

Inspection of the tympanic membrane

Assessment of TM mobility

Assessment of hearing

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Practice Guideline Specifics

Follow-up

- The purpose of the follow-up exam is to identify persistent otitis media or persistent middle ear effusion
- Children with persistent otitis media or persistent middle ear effusion should be seen on a monthly basis until their exam is normal

Otitis Media
Practice Guideline Specifics

Follow-up

- Earlier post treatment follow-up is not necessary unless there is:

Parental suspicion of persistence

Persistence of symptoms in an older child

Otitis Media

Practice Guideline Specifics

Follow-up

- Earlier post treatment follow-up is not necessary unless there is:

A high risk situation, such as children less than 15 months or history of recurrent otitis

Doubt about the accuracy of parental input

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Practice Guideline Specifics

Otitis media with effusion (OME)

- Characterized by fluid in the middle ear without evidence of ear infection
- Pneumatic otoscopy can increase accuracy in the diagnosis
- Visual inspection is usually not sufficient
- Tympanometry may be used supplementally

Otitis Media

Practice Guideline Specifics

- A hearing evaluation should be performed in all children who have had bilateral OME for more than three months or unilateral effusion for more than six months
- Hearing screening is appropriate when effusion has been present for a shorter period of time and there is a suspected hearing deficit

Otitis Media

Practice Guideline Specifics

Treatment - OME

- Most cases of OME resolve spontaneously
- A 14 percent increase in resolution rate has been demonstrated in studies on the use of antibiotics (10 days)
- Weigh the small improvement in resolution against potential side effects, cost, and development of antimicrobial resistance

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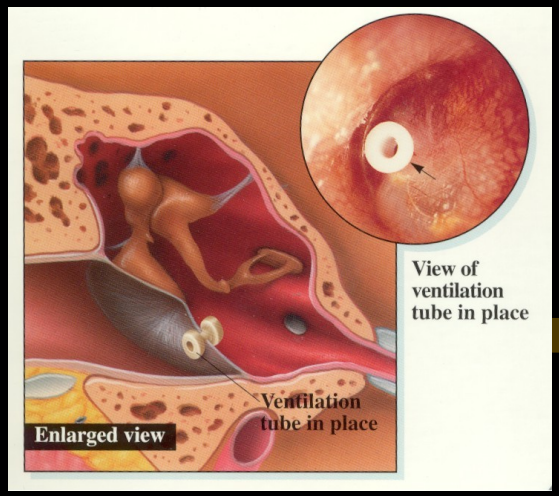
Practice Guideline Specifics

Treatment - OME

- Antihistamine/decongestant therapies are not recommended
- steroids are not recommended



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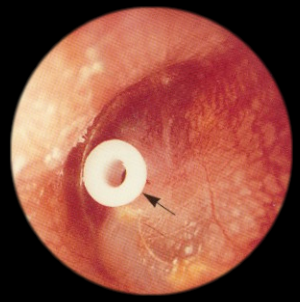
Practice Guideline Specifics

Chronic OME

- Tympanostomy tube placement should be considered for children who have OME that is unresponsive to medical management and has persisted for three months when bilateral or six months when unilateral



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Practice Guideline Specifics

- The presence of any of the following support the need for surgical evaluation:

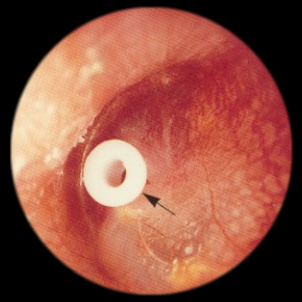
Significant hearing loss

Speech/language delay

A severe retraction pocket

Disequilibrium/vertigo

Tinnitus



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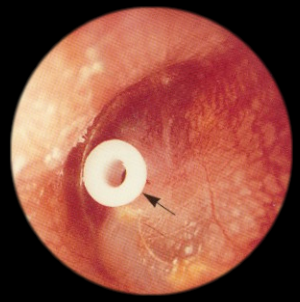
Practice Guideline Specifics

Ear Pain with Normal Physical Exam

- In the event of a normal exam and if symptoms continue, a follow-up visit is appropriate
- Other causes of ear pain such as eustachian tube dysfunction or temporomandibular joint pain should then be considered



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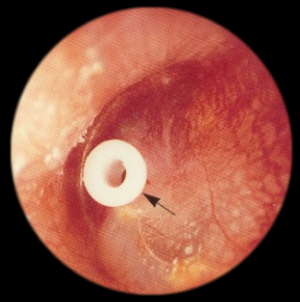
Practice Guideline Specifics

Indications for the insertion of tympanostomy tubes include:

- Chronic otitis media with effusion particularly when accompanied by a hearing deficit
- Recurrent otitis media despite antimicrobial prophylaxis



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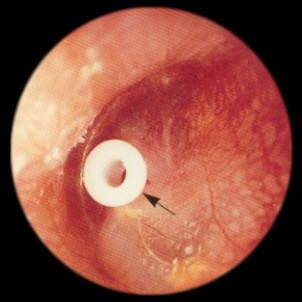
Practice Guideline Specifics

Indications for the insertion of tympanostomy tubes include:

- Suspicion or presence of a suppurative complication such as meningitis or mastoiditis



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Practice Guideline Specifics

Indications for the insertion of tympanostomy tubes include:

- Eustachian tube dysfunction, even in the absence of middle ear effusion, when the child has persistent/recurrent signs and symptoms (fluctuating hearing loss, disequilibrium/vertigo, tinnitus, or a severe retraction pocket) that are not relieved by medical treatment options

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